PRESERVED

App. F. IX-4

1930.1

File No. 40-30

Previous References
6.V (1-7)

(6.V)

Serial Nos. 1-3

Later References
6.V24-31 (1-3)

PRESERVED

General and Revenue Secretariat.

Serial Nos. Three.

Part B for Nov. 30

SUBJECT.

Report on the workings of the Lepra Institu for the year 1929-30 and Government resol thereon.

2705-6 & 30.10.30

To

Dir of Agri ii
Senior Surgeon

Record the

General and Revenue Secretariat | C File No. 40/ 4162 of 1930

OFFICE OF THE FIRST MEMBER OF C
25 OCT. 1930
No. 4162

Serial No. 1

Letter No C 7766 of 30-31 d. 9.9.30 from the Dir: of Agriculture.

Submits a report on the working of the Serum Institute for 29.

Submitted with draft reply

Sub

4/10

Clean type as revised

Ce 19/10/30

Typed draft Subd

Sub

22/10 - Secys

opl: for approval

Ce 23/10

24/10

Fin: secretary

Rm 25/10

Ce 25/10

Revenue.

CSY 27/10

Rm.

Ce 27/10

MC 27.10.30

Rm 28/10.

Subd may the draft issue now? Ce 28/10

Sub KD 28/10

Issue Ce 28/10

DEWAN'S OFFICE
27 OCT. 1930
2050

To the Direct. of Agri & Senior Surgeon order No 4705-6/C. dt 30/10/30

3. Records the report on the working of the Serum Institute observing the considerable savings to the State by the local manufa of serum & virus, & anticipates a more economical production of virus about the end of the current year.

NOTE—Contn. Sheet

WD 02553—50,000—GPB—8-7 30

Subd. The file receiving previous years report to print up with this file is sent for this Dept/State Ad: Report now before this Dept. sent since deal with and put up

Sub 4/10

Sub 7/10

File No. of 193 Secretariat

4705-6 & 30.10.30 the Director of Agri & the Senior Surgeon - Records the report with observations.

Submit with a D.F.N.

4/11/30

Dewan.

6/11

6/11.30

DEVIANCE O...
23 NOV.

OFFICE OF THE FIRST MEMBER OF COUNCIL
4 NOV. 1930
No. 4535

Dear Sir
6/11/30

Final Note by the First Member of Council.

Subject:—

Annual Report on the working of the Serum Institute for the year 1929-30.

The Annual Report on the working of the Serum Institute for the year 1929-30 with the Government Review thereon is submitted for the gracious perusal of His Highness.

C S Balasundaram

MEMBER OF COUNCIL.

Bangalore,
4th November 1930.

Submitted to His Highness.

I submit herewith a Final Note by the First Member of Council on the subject of the Annual Report on the working of the Serum Institute for the year 1929-30,

for His Highness' gracious ~~approval~~ perusal.

M N Srinivasa Rau

Bangalore,
8th November 1930.

Offg. Dewan.

Record of Cases submitted for the Orders of His Highness the Maharaja.

Subject.

Report on the working of the Serum Institute for the year 1929-30 and Government review thereon.

226

Order.

KRW
13/11/30

221/44

General and Revenue Secretariat

Report on the working of the Serum Institute for the year 1929-30. and Govt. Review thereon.

(*)

31. All urgent or confidential files returned with His Highness' orders may in the absence of instructions or indications to the contrary, be ordinarily circulated to the Members of Council for perusal after the issue of orders.

33. The Secretaries concerned should see that orders in the cases referred to above are issued at once and that the files are returned immediately after to the Chief Secretary for circulation to the Members.

34. In all other cases, the files will first be circulated to the Members of Council at Headquarters and then sent to the Secretariat concerned for the issue of orders.

Circulated to Members of Council for perusal of His Highness' orders before/after issue of orders. (*Vide* Rules 31, 33 and 34 of the Subsidiary Rules for the conduct of business of Council in the Manual of Council Rules and Procedure.)

Chief Secretary to Government.

Through the Secretary to Government.

Dev Department.

5012/18/11

FIRST MEMBER OF COUNCIL. 18/11

4218/18/11

SECOND MEMBER OF COUNCIL. 18/11

1679/17/11

THIRD MEMBER OF COUNCIL. 18/11

Dev Secy c/r Mr Coates.

NOTE.—Contn. sheet E725

G.R.S. III—5]

Routine Notes.

[To be used only for notes, requisitions, etc., not intended for permanent record.]

C.V. 40-30-1

GEN. SECTT. 2246 SEP. 1930 DEVELOPMENT BRANCH.

Letter No.C.776 of 30-31 dated 9th September 1930 from the Director of Agriculture in Mysore.

....

I have the honour to forward herewith (in triplicate) the Report on the working of the Agricultural and Associated Departments (Amrit Mahal, Civil Veterinary and Serum) for the year 1929-30.

"C O P Y"

N.B.—Should routine notes be written on small slips, the notes must be copied, or slips pasted on this form.

Report of the Serum Institute for the year ending 30th June 1930.

Introduction.

Consequent on the relatively lower severity of Rinderpest in the State as compared with that of the previous year there was a reduction in the production of both Serum and Virus. The total production of Serum was 12,31,074 doses as compared with 17,68,331 doses in 1928-29. The production of Virus was 9,51,700 c.c. as compared with 10,10,150 c.c. the previous year. The cost of Serum rose from Rs.0-0-8½ per dose to Rs.0-0-11 per dose, that of virus from Rs.0-0-11 per c.c. to Rs.0-1-0 per c.c. In the case of serum this was due largely to the reduced production as the over head charges of necessity remained the same. In the case of virus there was another important factor in increasing the cost. This was the failure in a large number of virus producers to show the typical clinical symptoms which have heretofore been considered necessary to ensure a potent virus. This led to the discarding of a large number of the animals which were purchased to produce virus. In addition an outbreak of Haemorrhagic Septicaemia led to the discarding of a considerablex quantity of the virus drawn. The officer in charge has worked out a new standard of clinical symptoms to meet Mysore conditions. With this improvement and with the transfer of the institute to its new home at Hebbal it shouldbe possible to produce virus more economically. It is important to remember that even the increased cost that obtained during the year our serum and virus has cost us only about 1/3 4/5 as much as if we had drawn our supplies from Lukhteaser.

If as I anticipate the persistent campaign against rinderpest which is now being conducted enables us to bring the disease under control the production of serum and virus will necessarily fall unless we can find an outlet outside the State. As a matter of fact a small external demand has already arisen and shipments were made during the year to Madras, Hyderabad, Cochin and Travancore. Whether it will be possible through arrangements with neighbouring Animal Husbandry Departments to stabilise our

manufacture at a certain definite ~~definite~~ level remains to be seen. Even if this proves impossible and there is a reduction in local demand there is more than enough work to keep the whole staff busy in the preparation of sera and vaccines for other contagious diseases, material which has now to be imported from outside. Work in this direction will be taken up as the -- Institute is transferred to its new quarters at Hebbal.

A new site for the Institute was acquired during the year and construction of the necessary buildings was commenced. These it is anticipated will be completed before the end of the calendar year. The severe congestion now existing which has been the cause of so much difficulty will be relieved and the officers of the Institute will for the first time be provided with something like satisfactory conditions for work.

It is interesting to report that the durbars of Hyderabad and Travancore sent Veterinary officers to Bangalore for training in the Serum Simultaneous method of inoculation while enquiries were made by the Madras Veterinary Department as to the organization of the Institute and production, costs of serum.

The work of the Institute was carried on very efficiently by Dr. Parthasarathy and the staff working under him under what must be considered as very difficult conditions.

Yours obedient servant
Dy Director of Agriculture
7.7.30

ANNUAL REPORT OF THE MYSORE SERUM INSTITUTE FOR THE YEAR 1929-30.

GENERAL:- The work of the Institute consisted of the production of Anti-Rinderpest Serum and Rinderpest Virus as in the previous year. The Institute continued to work in the adjoining buildings of Guest Quarters in Race View, High Grounds. The same difficulty of want of sufficient accommodation was felt this year as well, giving rise to occurrence of outbreaks of epedemic diseases which interrupted on two occasions the continued production of virus and serum.

On the representation made to Government during 1928-29 by the Director of Agriculture, Government were pleased to sanction the construction of a new building on up-to-date lines for the Institute, at a total cost of Rs.80,000/- including the cost of site acquired for the purpose at a cost of Rs.11,000/-, close to the Agricultural Farm at Hebbal. The construction work was started by the Department of Public Works by about the beginning of April 1930 and is expected to be completed by about the end of October 1930. As regards water supply, arrangements have been made with the Director of Industries & Commerce to bore a hole in the premises so that the Institute may get sufficient supply of water.

ANIMALS:- Animals used at the Institute are he-buffaloes and he-buffalo calves - the former for Serum production and the latter for Virus production. Six buffaloes were purchased

at Rs.40/- and the calves at Rs.15/- per head. Calves required for serum testing were purchased from Malnad areas as heretofore. No tender system was adopted during the year, as it was decided to call tenders for the supply of fresh he-buffaloes and sale of done buffaloes and to purchase calves without recourse to tender system so that the Institute may get the required number of suitable animals for efficient and economic production of the materials at the Institute. During the year no difficulty was felt in buying either Serum or Virus animals. As in the previous years there was difficulty in disposing of the used animals.

The animals were looked after in the Institute until they became healthy and then attempts were made to sell them. If they were not sold they were sent to Bettahalli Kaval where they were tended until they could be sold. During the year, while some of the animals were purchased by the local ryots, the rest were purchased by cattle dealers from Coimbatore District. The amount realised per pair, of he-buffaloes ranged from Rs.35/- to Rs.18/- and, of he-buffalo calves from Rs.10/- to Rs.7/- the price depending on the condition of the animal and the demand for the same.

The used animals at the Bettahalli Forest Kaval had to be very carefully looked after when there was scarcity of fodder in the kaval and permission to graze the animals in the Gulhatti kaval close to Bettahalli was obtained and ragi straw to the extent of

Rs.1,159/- was purchased for feeding the animals. The necessity for immediate disposal of used animals as soon as they are fit to be sold was felt. Tenders were called for the sale of used animals. The tender is now accepted for their sale during 1930-31.

The animals were located in 4 different places during the year:-

(1) The animals under use were at the Institute.

(2) Reserve and observation stock at the Reserve Depot, at the Chattram close to the Sampangi tank in Bangalore.

(3) Used animals at the Bettahalli Forest Kaval on the Bangalore Kankanhalli Road.

(4) Animals that were suffering from epedemic diseases and their contacts were removed to Kenchanahalli kaval about 11 miles from Bangalore.

The total number of animals that were sent to Bettahalli Forest Kaval for grazing, during the year, was 732 buffaloes and 557 calves. The number of animals that were taken to Kenchanahalli kaval was 270 calves. The latter kaval was used twice during the year - first, on 22-7-1929 and a second time, on 26-8-1930 as Haemorrhagic Scepticaemia broke out among the Institute animals.

Breaking out of epedemic diseases among the Institute animals dislocated the continuity of work. Fortunately, as a result of the precautions taken in receiving the incoming animals, epedemics of F & M and other contagious diseases were avoided. The only epedemic disease that

broke out was Haemorrhagic Septicaemia and that was among the animals in the Institute. Investigation was conducted to a certain extent and could not be proceed with further for want of sufficient accommodation in the present premises. The material are ready for investigations.

ESTABLISHMENT. (Executive):- There was no change either in the number or in the personnel during the year except under menial establishment. The establishment consisted of one Veterinary Assistant Superintendent, 6 Veterinary Inspectors, 9 Salustries, 3 Attendants, 1 Carpenter, 1 Packer, 1 Maistry, 57 Cattlemen, and 4 Ghotties.

The staff that worked in the virus section consisted of the Assistant Superintendent, one Veterinary Inspector, one Salustry and nine cattlemen and the rest of the staff other than the Carpenters and two Attendants belonged to the Serum Section. One Attendant was for assisting in the Laboratory and the other for preparing Media.

OFFICE:- The ministerial Establishment at the beginning of the year under report consisted of one Accountant, one Clerk, one Chart-Clerk and one Store-keeper. During the year, the Government sanctioned the change in the Designation of the Accountant to Head Accountant and the appointment of an additional Accountant on Rs.50/- and a Store Peon on Rs.12/- per mensem. Recommendations were also sent by

the Director of Agriculture for increasing the pay of the Head Accountant and for the appointment of an additional Clerk on account of the increased work in the Office. Provision has been made for the same in the budget and Government Orders as to sanction are awaited.

LABORATORY:- The work in the Laboratory is looked after by the Officer in charge with the help of one Veterinary Inspector who has a special aptitude for Laboratory work and worked during the previous years in this section. The work consisted chiefly of tests to find out the sterility of virus and serum produced. As a result of the outbreaks of H.C. during the latter part of the year, 1928-29, very stringent tests had to be done before a sample of virus could be passed as fit for use. Further, the microscopical examinations had to be done on every animal that was postmortemed to control the sterility results of Bacteriological examinations and the reports that would be expected from the Veterinary Inspectors.

No. of blood smears of virus animals examined during the year. 1000.

The total microscopical examinations done during the year for aerobic cultures in blood . . . 2162.

No. of plate cultures. . . . . 1000.

No. of anaerobic cultures done. . . . . 1056.

No. of microscopical examinations done in connection with post mortem. . . . 2241.
(both buffaloes and Cattles.)

No. of post mortems done during the year. 2143.

In addition, tests are done to prove the sterility of the Serum produced.

Total number of Serum brews examined, 13.

Experiments in connection with the inves tigations so far made were conducted in the Labora tory.

80 post mortems of rabbits were done.

VIRUS:- Buffalo bull calves were continue to be used during the year. Total number of buffalo calves used during the year was 2,746 as against 2,061 buffalo calves and 233 bull calves of last year. No trouble in connection with Piro infection was felt. But, difficulty was felt in meeting the demand for Virus from the Civil Veterinary Department though a larger number of animals were used, due to two reasons - one a very small percentage of the animals showed the clinical signs in time and the other - as some of the virus produced was found contaminated and had to be rejected. Hitherto, the clinical signs expected were the signs that are observed at Muktesar and the method of preparation of virus was also a modified method that is adopted at Muktesar. As a result of experience gained and observations made so far, the clinical signs that are to be expected Before a buffalo bull calf can be selected for the preparation of virus in Bangalore, has been decided and this has resulted in the rejection of a very small number out of the animals made use of. Further, the method adopted for the preparation of virus has been completel changed to get an uncontaminated virus and this has also been very successful. Hence, since June 1930, no difficulty has been felt in meeting the demand for virus and it is hoped that these two

changes will reduce the necessity of using a large number of animals.

Epidemics of Haemorrhagic Scepticaemia broke out during the year under report among the virus animals on two occasions. On the first occasion, the work had to be suspended and the Institute closed for a period of one month to be safe to begin with the work again. On the second occasion, one single case was noticed as a result of precautionary measures taken every day, it was necessary to suspend the work only for about a week.

Quantity of Virus produced during the year	9,51,700	c.c.
Quantity supplied to Mysore Civil Veterinary Department.	6,95,325	c.c.
Quantity taken by the Veterinary Inspectors of the Institute for inoculating the Anrithrahal cattle	29,625	c.c.
	724.950	
Quantity supplied to places outside the State	1,875	c.c.
Quantity used in the Institute. . . .	40,975	c.c.
Quantity of virus discarded.	1,68,175	c.c.
Quantity of Virus remaining on 1st July 1950. . .	9,725	c.c.
Cost of calves purchased during the year	Rs.42,968-8-0	
Establishment charges (The pay of the Virus section, ½ of Officer's pay, 1/3 of Office Establishment, Laboratory section and packing section.)	10,185-3-0	
Feeding charges. (1/3 of the whole cost is taken)	6,596-14-0	
Contingencies (½ of the whole cost is taken). . . .	4,058-9-11	
Chemicals.(1/3 of the whole cost is taken.)	867-8-0	
Travelling Allowance . (½ of the whole cost is taken).	1,274-4-0	
Total gross cost	Rs.65,947-15-5	

Appendix F G—1

SUBJECT.....

.....

.....

2245 + 2 Encls

Diary No. of letter replied to.....

General and Revenue Secretariat
( )
the 193 .

Date of issue.....

Signed by.....

Section C V
File No 40-30
Serial No. 2

No. D 2970/Pr 2 Repts

To The Supdt Govt Press

Sir,

I am directed to forward herewith a copy each of the marginally noted Admn Reports for 1929-30 and to request that the usual number of copies of the Report may be printed & kept ready for being bound with the review.

Proofs of the Report may be got verified by the

[over

Sorted with draft
Tabs
11/9

J Gore
KD
11/9

List of enclosures.....

Copied by.....

Examined by.....

WD 12559—GPB—25,000—25-6-30

Depth before final Copies
are struck off –

I have &c

For Dev Secy

Proceedings of the Govt. of H.H.
the Maharaja of Mysore.

Read -

Letter No.C.776 of 30-31 dated 9th Septr. 1930 from the Director of Agriculture submitting among others, a report on the working of the Serum Institute for 1929-30.

Order No.D.

Dated, Bangalore, Octr. 1930

R e c o r d s.

The total production of anti-rinderpest serum and rinderpest virus at the Institute during the year under report was 12,31,074 doses and 9,51,700 c.c. respectively as against 17,68,361 doses and 10,10,150 cc. during the previous year. As the over-head charges remained the same, this decreased production resulted in raising the cost of serum from 8½ to 11 pies per dose and that of virus from 11 pies to 1 anna per c.c. In spite of this, however, there was considerable saving to the State by the local manufacture of serum and virus.

The decreased output is said to be chiefly due to the epidemic of rinderpest having been less severe in the State during the year than in the previous year. In the case of virus the increased cost was also due to a large number of animals purchased for its production having had to be discarded as they failed to show typical

clinical symptoms of a potent virus and to the discarding of a considerable quantity of the virus drawn owing to outbreak of Haemorrhagic Septicaemia. The Director, however, reports that the officer in charge of the Serum Institute has worked out a new standard of clinical symptoms to meet Mysore conditions and that with this improvement and the transfer of the Institute to its new home at Hebbal about the end of the current calendar year, the more economical production of virus is anticipated.

In addition to meeting the local demand small quantities of serum and virus were also supplied during the year to the Governments of Madras, Hyderabad, Cochin and Travancore. Govt. are glad to note that the manufacture of sera and vaccines for other contagious diseases will be attempted when the Institute is transferred to its new premises.

Govt. wish to express their appreciation of the good work done at the Institute during the year.

Bra. 28/10

Secretary to Govt.
Dev. Departments.

Ce 23/10

To

The Director of Agriculture in Mysore.
The Senior Surgeon in Mysore.

Addl. 22/10.

ANNUAL REPORT OF THE MYSORE SERUM INSTITUTE FOR THE YEAR 1929-30.

WITH THE GOVERNMENT REVIEW THEREON.

Government of his highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS.

G. O. No. D. 4705-6—C. V. 40-30-3, dated 30th October 1930.

Administration Report of the Serum Institute for 1929-30.

Reviews the ——.

READ—

Letter No. C. 776 of 30-31, dated 9th September 1930, from the Director of Agriculture, submitting among others, a report on the working of the Serum Institute for 1929-30.

ORDER NO. D. 4705-6—C. V. 40-30-3, DATED 30TH OCTOBER 1930.

Recorded.

The total production of anti-rinderpest serum and rinderpest virus at the Institute during the year under report was 12,31,074 doses and 9,51,700 c.c. respectively as against 17,68,361 doses and 10,10,150 c.c. during the previous year. As the overhead charges remained the same, this decreased production resulted in raising the cost of serum from 8½ to 11 pies per dose and that of virus from 11 pies to 1 anna per c.c. In spite of this, however, there was considerable saving to the State by the local manufacture of serum and virus.

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Government wish to express their appreciation of the good work done at the Institute during the year.

N. RAMA RAO,
Secretary to Government,
Development Departments.

To—The Director of Agriculture in Mysore.
The Senior Surgeon in Mysore.

Exd.—D. K. M.

WD 2646—GPB—255—12-6-1931.

REPORT OF THE SERUM INSTITUTE FOR THE YEAR ENDING 30TH JUNE 1930.

INTRODUCTION.

Consequent on the relatively lower severity of Rinderpest in the State as compared with that of the previous year, there was a reduction in the production of both Serum and Virus. The total production of Serum was 12,31,074 doses as compared with 17,68,361 doses in 1928-29. The production of Virus was 9,51,700 c. c. as compared with 10,10,150 c. c. in the previous year. The cost of Serum rose from Re. 0-0-8½ per dose to Re. 0-0-11 per dose, that of virus from Re. 0-0-11 per c. c. to Re. 0-1-0 per c. c. In the case of serum, this was due largey to the reduced production as the overhead charges of necessity remained the same. In the case of virus, there was another important factor in increasing the cost. This was the failure in a large number of virus producers to show the typical clinical symptoms which have heretofore been considered necessary to ensure a potent virus. This led to the discarding of a large number of the animals which were purchased to produce virus. In addition, an outbreak of Haemorrhagic Septicæmia led to the discarding of a considerable quantity of the virus drawn. The officer in charge has worked out a new standard of clinical symptoms to meet Mysore conditions. With this improvement and with the transfer of the institute to its new home at Hebbal, it should be possible to produce virus more economically. It is important to remember that even at increased cost that obtained during the year our serum and virus has costed us only about ⅓ and 4/5 respectively as much as if we had drawn our supplies from Mukhtesar.

If, as I anticipate, the persistent campaign against rinderpest which is now being conducted enables us to bring the disease under control, the production of serum and virus will necessarily fall unless we can find an outlet outside the State. As a matter of fact a small external demand has already arisen and shipments were made during the year to Madras, Hyderabad, Cochin and Travancore. Whether it will be possible through arrangements with neighbouring administrations to stabilize our manufacture at a certain definite level remains to be seen. Even if this proves impossible and there is a reduction in local demand there is more than enough work to keep the whole staff busy in the preparation of sera and vaccines for other contagious diseases, material which has now to be imported from outside. Work in this direction will be taken up as the Institute is transferred to its new quarters at Hebbal.

A new site for the Institute was acquired during the year and construction of the necessary buildings was commenced. These, it is anticipated, will be completed before the end of the calendar year. The severe congestion now existing which has been the cause of so much difficulty will be relieved and the officers of the Institute will, for the first time, be provided with something like satisfactory conditions for work.

It is interesting to report that the Durbars of Hyderabad and Travancore sent Veterinary officers to Bangalore for training in the Serum Simultaneous method of inoculation while enquiries were made by the Madras Veterinary Department as to the organization of the Institute and production costs of serum.

The work of the Institute was carried on very efficiently by Dr. Parthasarathy and the staff working under him under what must be considered as very difficult conditions.

LESLIE C. COLEMAN,
Director of Agriculture.

ANNUAL REPORT OF THE MYSORE SERUM INSTITUTE FOR THE YEAR 1929-30.

General.—The work of the Institute consisted of the production of Anti-Rinderpest Serum and Rinderpest Virus as in the previous year. The Institute ontinued to work in the adjoining buildings of Guest Quarters in Race View, High rrounds. The same difficulty of want of sufficient accommodation was felt this ear as well, giving rise to occurrence of out-breaks of epidemic diseases which nterrupted on two occasions the continued production of virus and serum.

On the representation made to Government during 1928-29 by Director of griculture, Government were pleased to sanction the construction of a new build-ng on up-to-date lines for the Institute, at a total cost of Rs. 80,000 including ne cost of sites acquired for the purpose at a cost of Rs. 11,000 close to the Agri-ultural Farm at Hebbal. The construction work was started by the Department f Public Works by about the beginning of April 1930 and is expected to be com-leted by about the end of October 1930. As regards water supply, arrangements ave been made with the Director of Industries and Commerce to bore a hole in ne premises so that the Institute may get sufficient supply of water.

Animals.—Animals used at the Institute are he-buffaloes and he-buffalo calves ne former for Serum production and the latter for Virus production. He-buffaloes ere purchased at Rs. 40 and the calves at Rs. 15 per head. Calves required for erum testing were purchased from Malnad areas as heretofore. No tender system as adopted during the year. It was decided to call tenders for the supply of fresh e-buffaloes and sale of done buffaloes and to purchase calves without recourse to nder system so that the Institute may get the required number of suitable animals r efficient and economic production of the materials at the Institute. During the ear no difficulty was felt in buying either Serum or Virus animals. As in the revious years, there was difficulty in disposing of the used animals.

The animals were looked after in the Institute until they became healthy and nen attempts were made to sell them. If they were not sold they were sent to Bettahalli Kaval where they were tended until they could be sold. During the ear, while some of the used animals were purchased by the local raiyats, the rest ere purchased by cattle dealers from Coimbatore District. The amount realised er pair, of he-boffaloes ranged from Rs. 35 to Rs. 18 and of he-buffalæ calves from s. 10 to Rs. 7 the price depending on the condition of the animal and the demand r the same.

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The total number of animals that were sent to Bettahalli Forest Kaval for azing during the year was 732 buffaloes and 557 calves. The number of animals at were taken to Kenchanahalli Kaval was 270 calves. The latter kaval was used

twice during the year-first, on 22nd July 1929 and a second time, on 26th February 1930 as Hæmorrhagic Scepticæmia broke out among the Institute animals.

Breaking out of epidemic diseases among the Institute animals dislocated the continuity of the work. Fortunately, as a result of the precautions taken in receiving the incoming animals, epidemics of foot and mouth and other contagious diseases were avoided. The only epidemic disease that broke out was Hæmorrhagic Scepticæmia and that was among the animals in the Institute. Investigation was conducted to a certain extent and could not be proceeded with further for want of sufficient accommodation in the present premises. The materials are ready for investigation.

Establishment. (*Executive*).—There was no change either in the number or in the personnel during the year except under menial establishment. The establishment consisted of one Veterinary Assistant Superintendent, 6 Veterinary Inspectors, 9 Salustries, 3 Attendants, 1 Carpenter, 1 Packer, 1 Maistry, 57 Cattlemen, and 4 Thotties.

The staff that worked in the virus section consisted of the Assistant Superintendent, one Veterinary Inspector, one Salustry and nine cattlemen and the rest of the staff other than the Carpenters and two Attendants belonged to the Serum Section. One attendant was for assisting in the Laboratory and the other for preparing Media.

Office.—The ministerial Establishment at the beginning of the year under report consisted of one Accountant, one Clerk, one Chart-Clerk and one Storekeeper. During the year, the Government sanctioned the change in the designation of the Accountant to Head Accountant and the appointment of an additional Accountant on Rs. 50 and a Store Peon on Rs. 12 per mensem. Recommendations were also sent by the Director of Agriculture for increasing the pay of the Head Accountant and for the appointment of an additional Clerk on account of the increased work in the Office. Provision has been made for the same in the budget and Government orders as to sanction are awaited.

Laboratory.—The work in the Laboratory is looked after by the Officer in charge with the help of one Veterinary Inspector who has a special aptitude for Laboratory work and worked during the previous years in this section. The work consisted chiefly of tests to find out the sterility of virus and serum produced. As a result of the outbreaks of Hæmorrhagie Scepticaemia during the latter part of the year, 1928-29, very stringent tests had to be done before a sample of virus could be passed as fit foruse. Further, the microscopical examinations had to be done on every animal that was postmortemed to control the sterility results of Bacteriological examinations and the reports that would be expected from the Veterinary Inspectors.

Number of blood smears of virus animals examined during the year ...	1,000
The total microscopical examinations done during the year for aerobic cultures in blood.	2,164
Number of plate cultures	1,000
Number of anærobic cultures done	1,056
Number of microscopical examinations done in connection with post-mortem. (both buffaloes and Calves.)	2,241
Number of post mortems done during the year	2,143

In addition, tests are done to prove the sterility of the Serum produced.

Total number of serum brews examined 13.

Experiments in connection with the investigations so far made were conducted in the Laboratory.

Twenty post mortems of rabbits were done.

Virus.—Buffalo bull calves were continued to be used during the year. Total number of buffalo calves used during the year was 2,746 as against 2,061 buffalo calves and 229 bull calves of last year. No trouble in connection with Piro infection was felt. But, difficulty was felt in meeting the demand for Virus from the Civil Veterinary Department though a larger number of animals were used, due to two reasons, one, a very small percentage of the animals showed the clinical signs in time and the other, as some of the virus produced was found contaminated and had to be rejected. Hitherto, the clinical signs expected were the signs that are observed at Muktesar and the method of preparation of virus was also a modified

method that is adoped at Muktesar. As a result of experience gained and observations made so far, the clinical signs that are to be expected before a buffalo bull calf can be selected for the preparation of virus in Bangalore, has been decided and this has resulted in the rejection of a very small number out of the animals made use of. Further, the method adopted for the preparation of virus has been completely changed to get an uncontaminated virus and this has also been very successful. Hence, since June 1930, no difficulty has been felt in meeting the demand for virus and it is hoped these two changes will reduce the necessity of using a large number of animals.

Epidemics of Hæmorrhagic Scepticæmia broke out during the year under report among the virus animals on two occasions. On the first occasion, the work had to be suspended and the Institute cleared for a period of one month to be safe to begin the work again. On the second occasion, one single case was noticed as a result of precautionary measures taken every day, it was necessary to suspend the work only for about a week.

	c. c.
Quantity of virus produced during the year	9,51,700
Quantity supplied to Mysore Civil Veterinary Department ...	6,95,325
Quantity taken by the Veterinary Inspectors of the Institute for inoculating the Amritmahal cattle	29,625
Total ...	7,24,950
Quantity supplied to places outside the State	1,875
Quantity used in the Institute	46,975
Quantity of virus discarded	1,68,175
Quantity of virus remaining on 1st July 1930	9,725

	Rs.	a.	p.
Cost of calves purchased and used during the year ...	42,968	8	0
Establishment charges (The pay of the virus section, half of officer's pay one-third of Office Establishment, Laboratory section and packing section)	10,185	3	0
Feeding charges (one-third of the whole cost is taken) ...	6,596	14	0
Contingencies (half of the whole cost is taken) ...	4,058	9	11
Chemicals (one-third of the whole cost is taken) ...	867	8	0
Travelling allowance (half of the whole cost is taken) ..	1,271	4	6
Total gross cost ...	65,947	15	5
Deduct receipts from the sale of done calves and carcasses ...	4,814	7	0
Deduct receipt from the probable realisation by the sale of animals on hand at Rs. 4 per animal	848	0	0
Deduct amount realised by the sale of virus to Madras Civil Veterinary Department	124	1	0
Total ...	5,786	8	0
Net cost ..	60,161	7	5

The 9,51,700 c.c. of Virus produced costed Rs. 60,161-7-5 working at 0-1-0 per c.c. of virus as compared to Re. 0-0-11 per c.c. of last year.

During the year under report, though a smaller quantity of virus was purchased and supplied to the Civil Veterinary Department the cost has increased on account of the two causes mentioned above. Out of the 2,746 buffalo calves used 1,746 were rejected, as they did not show the signs of the disease in time. Further, as a result of the stringent tests, 1,68,175 c.c. were discarded. The clinical signs now decided on and the new method of preparation are expected to reduce the cost of production during the current year.

Serum.—He-buffaloes were used as usual. The total quantity of Serum that was originally proposed to be prepared was 18 lakhs doses and the budget grant of Rs. 1,80,000 was sanctioned accordingly. As there was no demand for such a large quantity of Serum during the year, the total quantity produced was 12,31,074 doses. The money that was left unspent under 'purchase of buffaloes' and 'feeding charges' was partly utilised for 'the purchase of calves', which was necessary for the production of more quantity of virus to meet the demand from the Civil Veterinary Department. Rs. 12,660 was reappropriated to the Agricultural Department proper, from the budget of the Institute.

The total number of animals bought during the year was 1,025 and including ıe number on hand on 1st July 1929, the total number was 1,086. The number sed during the year was 913. Animals left on hand at the end of the year for se at the beginning of the current year were 159. Ten died before use and four ere used for virus production. Of the used animals, 140 died at the Institute uring the period of serum production. Out of 12,31,074 doses of serum produced, ,150 doses were sold to places outside Mysore, such as, Cochin and Pudukottah.

The quality of serum was maintained throughout the year as in the previous years. The dose of serum advised after testing was 30 c.c. per 600 lbs. body weight.

In testing the serum, Malnad calves were used as usual at a total cost of Rs. 1,742-0-0. The malnad calves were found to be extremely useful in deciding the dosage of the serum produced.

	doses
Quantity of serum produced during the year	12,31,074
Quantity supplied to Mysore Civil Veterinary Department ...	10,26,000
Quantity of serum taken by the Veterinary Inspectors of the Institute for inoculating Amritmahal Cattle	17,280
	10,43,280
Quantity of serum supplied to places outside the State ...	2,150
Quantity of serum used in the Institute	3,690
Quantity of serum remaining on 1st July 1930 ...	2,71,954

	Rs. a. p.
Cost of buffaloes purchased and used	36,680 0 0
Establishment charges (pay of the serum section, half of Officer's pay, two-thirds of Office Establishment, Laboratory section and Packing section)	23,948 8 0
Feeding charges (two-thirds of the whole cost is taken) ...	13,193 12 0
Contingencies (half of the whole cost is taken) ...	4,058 9 11
Chemicals (two-thirds of the whole cost is taken) ...	1,735 0 0
Travelling allowance (half of the whole cost is taken) ..	1,271 4 6
Total gross cost ...	80,887 2 5
Deduct receipts from the sale of done buffaloes ..	8,160 0 0
Sale of manure	117 0 0
Deduct receipt from the probable realizable amount by the sale of the used animals on hand at Rs. 10 per animal ...	1,720 0 0
Total ...	9,997 0 0
Net cost ...	70,890 2 5

The 12,31,074 doses of serum were produced at a total cost of Rs. 70,890-2-5 working at Re. 0-0-11 per dose of 5 c.c. as compared to Re. 0-0-8½ per dose of last year. This increase is due to the Establishment maintained for the smaller quantity of serum produced, and the extra expenditure of Rs. 1,284 was incurred in feeding the used animals at Bettahalli as there was no fodder in the kaval on account of the unfavourable seasonal conditions. The quantity produced is 2/3 of what wa produced last year and the cost of animals, feeding and contingent charges wer proportionately less except the Establishment charges. From the experience gaine for the last three years it is found that the present establishment is absolutel necessary to maintain the sterility and the potency of the serum produced and als to meet the demand for serum and virus from the Civil Veterinary Department.

Investigations.—In addition to the routine work of the Institute, investigatic work was undertaken this year with the kind permission of the Director to find o the longevity of immunity produced as a result of s.s. inoculation. The animals the Amritmahal Department which had to be s.s. inoculated were made use of f the purpose of the experiment. The Superintendent, Amritmahal Departme was immensely helpful in carrying out the experiment. The period of observati and experiment is about three years and no conclusions could be anticipated present.

(2) Experiment to find out the value of Anti-Rinderpest serum as a curative in clinically well developed cases of Rinderpest are being conducted.

(3) The Director was kind enough to permit me to carry on the investigations in connection with ragi poisoning in man. A fungus was grown from the old ragi that when used gives rise to fatal results in man. The Mycologist of the Agricultural Department was approached for identifying the fungus and he has indentified the fungus as Heterosporideum. A paper on the subject was read by me before the Medical Conference at Mysore held in the month of March 1930, on "Old ragi that gives rise to ragi poison and the results of some animal experiments with it." Mr. Narasimhan, the Mycologist, read on the identification of the fungus. The Institute is extremely thankful to the Director of Agriculture for the kind permission and the opportunities given for carrying out the investigations.

The completion of the new serum Institute Buildings is awaited to carry on the work of the Institute in a more efficient manner as space and good Laboratory facilities are great necessities for the kind of work that is done at the Institute. The main buildings at Hebbal are constructed to meet the present needs in the production of Anti-Rinderpest Serum and Virus and also to be able to produce in larger quantities if any extra demand is necessary within a short time.

Finally, it may be stated that out of the budget grant of Rs. 1,80,000, for the year 1929-30, Rs. 1,46,835-1-10 was spent in the production of Serum and Virus excluding the charges under non-recurring heads.

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Officer in charge, Mysore Serum Institute.

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